



ENERGY

8.1L NA

56100022

Rev: 1

Units

8.1L NA

Std

Metric

1500

1800

General Engine Data

Type	N/A		In-Line 4 cycle			
Number of cylinders	N/A		6			
Aspiration	N/A		Naturally Aspirated			
Bore	in	mm	4.37	111	4.37	111
Stroke	in	mm	5.47	139	5.47	139
Displacement	in ³	L	492	8.1	492	8.1
Compression Ratio	N/A		10.5			
Mean Piston Speed	ft/min	m/s	1368	6.95	1641	8.34
Gross Standby Power Rating ^{1,2,3} Per ISO 3046 at the Flywheel						
NG	Hp	kW	99	74	134	100
LP	Hp	kW	99	74	134	100
MEP (@ rated Load on NG)	psi	bar	106	7	120	8
MEP (@ rated Load on LP)	psi	bar	106	7	120	8
Gross Prime Power Rating ^{1,2,3} Per ISO 3046 at the Flywheel						
NG	Hp	kW	90	67	118	88
LP	Hp	kW	90	67	118	88
MEP (@ rated Load on NG)	psi	bar	97	7	105	7.3
MEP (@ rated Load on LP)	psi	bar	97	7	105	7.3
RPM Range (Min-Max)	RPM		1500-2000			
Rotation Viewed from Flywheel	N/A		Counter Clockwise			
Firing Order	N/A		1-5-3-6-2-4			
Dry Weight						
Fan to Flywheel	lb	kg	2200	998	2200	998
Rad to Flywheel	lb	kg	2660	1207	2660	1207
Wet Weight						
Fan to Flywheel	lb	kg	2288	1038	2288	1038
Rad to Flywheel	lb	kg	2900	1316	2900	1316
CG						
Distance from FW housing	in	mm	17	426	17	426
Distance above center of crankshaft	in	mm	7	184	7	184

Engine Mounting

Maximum Allowable Bending Moment at Rear of Block	lb ft	N m	3540	4800	3540	4800
Moment of Inertia About Roll Axis	lb ft ²	kg m ²				
Flywheel housing	N/A		SAE No 2			
Flywheel	N/A		No 11 1/2			
Number of Flywheel Teeth	N/A		140			

Exhaust System

Type			Air Cooled Manifold			
Maximum allowable Back pressure	in HG	kPa	3	10.146	3	10.146
Standard Catalyst Back pressure	in HG	kPa	1.5	5.073	1.5	5.073
Exhaust Outlet Pipe Size						
Maximum Turbine Inlet Temperature	F	C	1382	750	1382	750
Exhaust Flow at Rated Power	lb/hr	kg/hr	632	283	790	358
Exhaust Flow at Rated Power @1350F	cfm	m ³ /min	478.5	13.5	605.7	17.2

Air Induction System

Maximum allowable Intake Air Restriction with Air Cleaner						
Clean	inH ₂ O	kPa	5	20	5	20
Dirty	inH ₂ O	kPa	15	4	15	4
Combustion Air required (entire engine)	lb/hr	kg/hr	596	267	745	338
Combustion Air required (entire engine)	cfm	m ³ /min	150	4	189	5



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Electrical System

Minimum Recommended Battery Capacity	AH	150			
Cold Cranking Current					
Engine only	CCA	900			
Engine with Drive train	CCA	900			
Maximum Allowable Resistance of Starting Circuit	Ohms	0.002			
Starting Motor Power	HP kW	6.0 4.5	6.0 4.5		
Battery Charging Alternator					
Voltage	Volts	24			
Current	Amps	45			
Coil primary Resistance	Ohms	0.59Ω ± 10%			
Spark Plug p/n		IFR7F-4D			
Spark plug gap	inches mm	.015" (-0/+ .008") .38mm (-0/+ .2mm)			

Cooling System

Coolant Capacity					
Engine only	gal L	5 19	5 19		
Engine with Radiator	gal L	22 83	22 83		
Engine Coolant Flow	gal/min L/min	53 201	63 238		
Water Pump Speed	RPM	1950	2340		
Heat rejected to Cooling water at rated Load	btu/min kcal/sec	3915 16	4990 21		
Maximum Intake Air Temperature (IAT)	F C	155 68	155 68		
ECU IAT Warning	F C	140 79.5	140 79.5		
ECU IAT Shutdown	F C	155 88	155 88		
Maximum Coolant Friction Head External to the engine	psi bar	5.8 0.4	5.8 0.4		
Maximum Air Restriction Across a Radiator	inH2O mmH2O	0.5 12.7	0.5 12.7		
Standard Thermostat Range					
Cracking Temperature	F C	160 71	160 71		
Full Open Temperature	F C	185 85	185 85		
Maximum Output Pressure of Engine Water Pump					
Maximum Allowable Pressure Cap	psi bar	14.7 1	14.7 1		
Ambient Clearance Open Genset (water) (Air-to-Boil)					
Specified	F C	142 61	142 61		
Actual	F C		160 71		
Ambient Clearance (Oil)					
Specified	F C	142 61	142 61		
Actual	F C		148 64		
CAC Rise over Ambient (Charge)					
Specified	F C				
Actual	F C		N/A		
Maximum Allowable Top Tank Temperature	F C	230 110	230 110		
ECU Warning	F C	220 104	220 104		
ECU Shutdown	F C	230 110	230 110		
Fan Power	HP kW	5 3.7	9 6.7		
Fan Diameter, including blades	in mm	28 711	28 711		
Fan Speed	RPM	1950	2340		
Cooling Fan Air Flow @ 1" Static H2O Pressure and 125F @ radiator	CFM m³/min	8000 224	10000 280		
Charge Air Cooler					
Compressor Outlet Temperature	F C	N/A N/A	N/A N/A		
Compressor Flow Rate per CAC	lb/hr kg/hr	N/A N/A	N/A N/A		
Heat Rejection per CAC	btu/min kW	N/A N/A	N/A N/A		



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Lubrication System

Oil Specification			SAE 15W-40 Low Ash Gas engine oil (.25-.5% by wt), API CD/CF or higher			
Oil Pressure						
Idle						
Min	Psi	Bar	11	0.8	11	0.8
Max	Psi	Bar	20.3	1.4	20.3	1.4
Rated Speed						
Min	Psi	Bar	20.3	1.4	20.3	1.4
Max	Psi	Bar	70	4.8	70	4.8
Maximum Allowable Oil Temperature	F	C	250	121	250	121
Engine Oil Capacity						
Min	Qts	L	18	17	18	17
Max	Qts	L	25	24	25	24
Oil Filter Capacity	Qts	L	3.75	4	3.75	4
ECU Oil Pressure Warning ⁵	psi		30			
ECU Oil Pressure Shut Down ⁵	psi		25			

Fuel System

Fuel Consumption ⁶						
NG	Ft ³ /hr	kg/hr	819	17	1103	22
LP	Ft ³ /hr	kg/hr	321	17	435	23
Maximum EPR Rated Pressure	psi	kPa	1.0	6.9	1.0	6.9
Maximum Running pressure to Electronic Pressure Regulator (EPR)	inH2O	kPa	11.0	2.7	11.0	2.7
Minimum Running pressure to EPR	inH2O	kPa	7.0	1.7	7.0	1.7
Minimum Gas Supply Pipe Size			1-1/4" NPT			
Maximum EPR Rated Pressure	psi	kPa	1.0	6.9	1.0	6.9
Maximum Running Pressure to EPR	inH2O	kPa	11.0	2.7	11.0	2.7
Minimum Running Pressure to EPR	inH2O	kPa	7.0	1.7	7.0	1.7
Minimum LPG Supply Pipe Size ⁴			1-1/4" NPT			

¹Standby and overload ratings based on ISO3046.

² All ratings are gross flywheel horsepower corrected to 77°F at an altitude of 328feet with no cooling fan or alternator losses using heating value for NG of 1015 BTU/SCF.

³ Production tolerances in engines and installed components can account for power variations of +/- 5%. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations.

⁴ The preceeding pipe sizes are only suggestions and piping sizes may vary with temperature, pressure, distance from supply and application of local codes. Gas must be available at adequate volume and pressure for engine at the EPR.

⁵ >1400RPM

⁶ See PSI Energy Technical Spec. 56100019 - Fuel Specification. Gas properties for fuel consumption data: NG: Density =0.717 kg/m3, LHV = 927 BTU/scf; Propane: Density = 1.882 kg/m3, LHV = 2316 BTU/scf